5.5 Transportation Accidents

An accident involving transportation vehicles within or to and from the permit area could potentially release pollutants to the environment. Transportation vehicles will include, but are not limited to: vehicles delivering bulk chemical products, transport of uranium-loaded resin from the Satellite Facility or another satellite facility to the Central Processing Plant, transport of solid 11e.(2) byproduct material (as defined under the Atomic Energy Act) from the project site to an approved disposal site, or transport of dried yellowcake product from the Central Processing Plant to a licensed uranium conversion facility. The nearest license uranium conversion facility is the Honeywell International Inc. facility located in Metropolis, Illinois. Chemicals and products delivered to or transported from the Dewey-Burdock Project Area must be transported in accordance with all applicable federal and state regulations.

As part of Powertech's Environmental Management Program, emergency response procedures will be developed and implemented as required under the DENR NPDES permit to ensure a rapid response to any transportation incidents. In addition, Powertech is required under the NRC license to implement an NRC-approved radiation protection program to protect occupational workers and ensure that radiological doses are ALARA. The applicant's radiation protection program includes commitments for implementing management controls, engineering controls, radiation safety training, radon monitoring and sampling, and audit programs. As a result, all personnel will be appropriately trained in emergency response procedures to facilitate proper response from Powertech employees in transportation incidents. A specialized, appropriately licensed transportation company will transport the yellowcake to a licensed uranium conversion facility. Powertech will develop an Emergency Preparedness Program that will be implemented should a transportation accident occur. As part of the Emergency Preparedness Program, Powertech will have administrative controls in place such as standard operating procedures for spill response and cleanup, programs for radiation and occupational monitoring, and training for workers in radiological health and emergency response.

Potential impacts from transportation accidents would differ according to material type, quantity and concentration involved. Transportation risks for yellowcake shipments, uranium-loaded resin shipments, process chemicals/fuel, and 11e.(2) byproduct material are described in the NRC license application. These are briefly summarized below.

5.5.1 Yellowcake Shipments

A specialized, appropriately licensed transportation company will transport the yellowcake to a conversion facility. The NRC license and the proposed DENR Large Scale Mine Permit require Powertech to develop an Emergency Preparedness Program, as part of the Environmental Management Plan, which will be implemented should a transportation accident occur. The primary potential impact associated with an accident involving the spill of yellowcake would be potential impacts to soil in the immediate spill area. The potential impacts will be minimized by implementing the Emergency Preparedness Program and excavating and removing or remediating in place affected soils.

5.5.2 Ion-Exchange Resin

The Burdock central processing plant will house the resin stripping equipment, but the Dewey satellite plant will not. Consequently, Powertech plan to transport uranium-loaded resin in tank trucks from the Satellite Plant to the Central Processing Plant ion-exchange system for processing. A transportation accident involving uranium-loaded resin would have a lower risk than the relatively low risk from an accident involving yellowcake due to the much lower concentration of uranium in the resin and the chemical bond between the uranium and

ion-exchange resin. The primary potential impact associated with an accident involving the spill of resin would be impacts to soil in the immediate spill area. The potential environmental impacts from an accident involving the shipment of ion-exchange resin would impact primarily the top soil in the area contaminated by the spill and the subsequent modification to the vegetation structure and the salvage of the top soil. This scenario would only take place if tanker trucks ruptured. Because the uranium is chemically bonded to the resin and the resin is wet, air dispersion is unlikely. Such spills are easily remediated by standard excavation and removal. Although the resin is wet, it is not wet enough for fluid flow to penetrate an aquifer and impact groundwater.

5.5.3 Process Chemicals and Fuel

Powertech anticipates that a number of chemicals and fuel deliveries to the Dewey-Burdock Project Site will occur each week. Process chemicals delivered to the Project Site will include carbon dioxide, oxygen, salt, soda ash, barium chloride, hydrogen peroxide, sulfuric acid, hydrochloric acid, and caustic soda. All applicable U.S. Department of Transportation (USDOT) hazardous materials shipping regulations and requirements must be followed during shipment of process chemicals and fuel to minimize the potential for transportation accidents. Under the proposed DENR Large Scale Mine Permit, Powertech will also be required develop standard operating procedures for unloading process chemicals and fuel within the Project Area to minimize the potential for spills.

5.5.4 11e.(2) Byproduct Material

Byproduct material is defined under Section 11e.(2) of the Atomic Energy Act. NRC regulations include wastes produced by the extraction or concentration of uranium under the definition of 11e.(2) byproduct material. Powertech must transport all solid 11e.(2) byproduct material generated in the Project Area to an appropriately licensed disposal facility. Most of the solid 11e.(2) byproduct material shipping will occur during site reclamation and decommissioning. The potential risk of a transportation accident is low, since solid 11e.(2) byproduct material is generally less radioactive than yellowcake and most of the waste will be in a solid form that is easy to contain. All applicable USDOT regulations and requirements must be followed during shipment to minimize the potential for a spill resulting from a transportation accident. The primary potential impact associated with an accident involving the spill of solid 11e.(2) byproduct material would be potential impacts to soil in the immediate spill area. The potential impacts will be minimized by excavating and removing or remediating in place affected soils.

5.6 Treatment and Storage Ponds

Powertech plans to construct ponds in both the Dewey and Burdock Areas to treat the ISR waste fluids to meet the injectate permit limits included in Part V, Section D.2.a, Table 16 of the UIC Class V Area Permit and to store the treated injectate until it is disposed of in the Class V injections wells. These ponds are another potential source for spills and leaks. However, the ponds are required by regulation to have liners and leak detection systems. The NRC license requires Powertech to conduct and document weekly leak inspections, including visual inspections of the pond embankments, fences, liners, and measurement of freeboard. If any evidence of leakage is found, the NRC license requires corrective action including:

1. Sampling the leaked fluid
2. Notifying the NRC within 48 hours
3. Lowering pond level and investigating liners for leakage
4. Repairing the leak and reintroducing water (daily monitoring for leakage is required during refilling)
5. Submitting a written report to the NRC within 30 days